



FIG. 12. Chest images by dual energy basis decomposition. (a) Low energy image. (b) Water subtracted image. (c) Bone subtracted image.

an image of correlated measurements, the two error sources would have equal impact. But it is not correct to equate these two error sources when generating a two dimensional image. The deterministic, recognizable, and broad area estimation errors are of secondary importance for many tasks compared to the fundamental photon noise. We are presently using a weighted quadratic closed-form estimation algorithm which appears to have an acceptable estimation accuracy for clinical examinations.

A material selective imaging system can be evaluated based upon its *sensitivity* to a single material and its *selectivity* or its ability to distinguish two materials of different composition. We are only beginning to appreciate the relative importance of these two factors in clinical diagnosis.

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